INTERSPIRO

30249A01

USER MANUAL

90USA AND 90USA-S

INTERSPIRO'S LIMITED WARRANTY

INTERSPIRO warrants this product against failure to comply with INTERSPIRO's published specifications for the product and against defects in materials and workmanship for a period of twelve (12) months after date of purchase. Within that period, INTERSPIRO will, at its option, repair or replace the product or refund your purchase price if INTERSPIRO determines the product does not conform to INTERSPIRO´s specifications or is defective in material or workmanship.

To make a warranty claim, contact your authorized INTERSPIRO distributor or INTERSPIRO directly. For telephone inquiries please have your product invoice or other proof of purchase available. If you write, include proof of purchase and a written explanation of the problem. Warranty servicing will be provided on-site or at one of INTERSPIRO's authorized service facilities, at INTERSPIRO's discretion. If shipment to an authorized service facility is required, shipping instructions will be provided by INTERSPIRO or your authorized INTERSPIRO distributor. Do not ship any product or component without shipping authorization. All shipping charges to INTERSPIRO's service facility must be prepaid by the customer.

This limited warranty does not apply if the product has been (I) involved in an accident or subjected to misuse, improper maintenance or negligence; (II) altered or repaired in any way that has, in INTERSPIRO's judgement, adversely affected its performance or reliability; (III) used in an application or for a purpose for which the product was not designed or under stresses or conditions exceeding those specified for the product; or (IV) damaged after leaving INTERSPIRO's facility.

This limited warranty is valid only for the original purchaser, and is not transferable.

IMPORTANT! This limited warranty is exclusive and is in lieu of all other warranties, expressed or implied, including any warranty of merchantability or fitness for a particular purpose. INTERSPIRO disclaims all other liabilities and obligations, including, to the extent allowed by law, non-contractual liability for personal injury or property damage based upon its negligence, strict liability or any other ground. To the full extent allowed by law, and regardless of whether liability is asserted on the basis of breach or warranty, negligence, strict liability, breach of contract or otherwise, INTERSPIRO shall not be responsible for special, incidental, consequential or punitive damages, including loss of property, loss of profits or revenues, down-time costs and the cost of substitute equipment (some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you).

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

90USA AND 90USA-S

CAUTIONS AND LIMITATIONS

D. Air-line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher quality.

E. Use only the pressure ranges and hose lengths specified in the user's instructions.

I. Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmosphere by MSHA/NIOSH.

J. Failure to properly use and maintain this product could result in injury or death.

M. All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.

N. Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.

O. Refer to users instructions, and/or maintenance manuals for information on use and maintenance of these respirators.

S. Special or critical users instructions and/or specific use limitations apply. Refer to instruction manual before donning.

S - SPECIAL OR CRITICAL USER'S INSTRUCTIONS

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases, and vapors at temperatures above -25 degrees F (-32 degrees C). Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7-1 for Type 1, Grade D air or higher quality, as well as meeting a dew point level of -65°F (-54°C) or dryer (24 ppm v/v or less), and a maximum particulate level of 5 mg/m3 air. The breathing air quality must be in accordance with NFPA 1989, Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection. The container shall meet applicable DOT specifications.

Approved for respiratory protection during emergency entry into hazardous atmosphere when supplied with respirable air at a pressure between 60 and 125 pounds per square inch and when using hoses with a total length between 25 and 300 feet, with a maximum of 12 hose lengths. Cylinder valve must remain closed during supplied air use. If supplied air is terminated, open cylinder valve and proceed to fresh air immediately. When used as a combination device, maximum utilization of the apparatus air supply during entry:-With ventilation: 10% of the rated capacity -Without ventilation: 20% of the rated capacity.

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SPIROTEK, SPIROTEK T, T2, T3, T4, and T5 4515,4530,6630, 9030 90USA AND 90USA-S OPEN-CIRCUIT, PRESSURE-DEMAND, ENTRY AND ESCAPE SELF-CONTAINED BREATHING APPARATUS OR COMBINATION SELF-CONTAINED BREATHING APPARATUS AND SUPPLIED-AIR RESPIRATOR

THESE RESPIRATORS ARE APPROVED ONLY IN THE FOLLOWING CONFIGURATIONS:

| | | ALTERNATE MASK ASSEMBLY | | | | | | | | | | | | | | BREATHING VALVE | ALTERNATE CYLINDER ASSEMBLY | | | | | | | | | | | | | | | | | ALTERNATE REGULATOR ASSEMBLY | | | | | | | | | | | ALT. HARNESS ASSY. | ALTERNATE AIRLINE HOSES | | | | ACCESSORIES | | | | | | | | | | | | | | | | |

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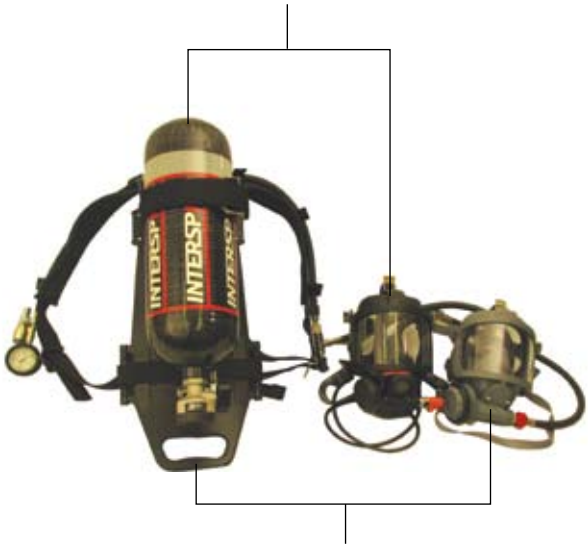
90USA-S Configuration



90USA Configuration

Fig. 1

INTERSPIRO

USER MANUAL

90USA and 90USA-S

1 SAFETY NOTICE

The product must only be used together with other approved INTERSPIRO products. The product must only be used by personnel in good health and trained in the use of respiratory protective equipment. Individuals with beards or large sideburns may not obtain an adequate seal. The apparatus must be maintained, serviced and tested as described in this user manual, INTERSPIRO service manuals and INTERSPIRO test instructions.

INTERSPIRO IS NOT RESPONSIBLE FOR

- MAINTENANCE AND REPAIRS NOT CARRIED OUT BY A HOLDER OF A VALID NTERSPIRO CERTIFICATE
- COMBINATIONS OF PRODUCTS, UNLESS PUT TO MARKET BY INTERSPIRO
- CHANGES OR ADAPTATIONS MADE TO THE PRODUCT BY A THIRD PARTY

Changes to this document - necessitated by typographical errors, inaccuracies of current information or improvements and changes of equipment - may be made at any time without prior notice. Always refer to www.interspiro.com for product updates, document updates and service bulletins. Exposure to extreme conditions, such as asbestos, may require other actions than described in this manual. The guarantees and warranties specified in the conditions of sale are not extended by this Safety Notice.

The compressed air with which the cylinders are charged must meet the requirements according to CGA G-7.1 Grade D or higher quality. Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7-1 for Type 1, Grade D air or higher quality, as well as meeting a dew point level of -65°F (-54°C) or dryer (24 ppm v/v or less), and a maximum particulate level of 5 mg/m3 air.

The compressed air cylinders shall meet applicable DOT specifications.

The duration of a compressed air breathing apparatus depends on the volume of air in the compressed air cylinder and the air consumption, which is specific to the wearer and affected by work load. Compressed air cylinder durations are available in 30 minute 2216 psi and 30,45 and 60 minute 4500 psi. Duration as listed are the durations when tested to NIOSH standards.

If the ambient temperatures is 32°F or below external icing can cause malfunction of the warning whistle. Under such circumstances the pressure gauge must be read more frequently.

2 CYLINDER MOUNTING

TEXTILE CYLINDER STRAP

1. Slide the cylinder through the cylinder strap.
2. Check the connection O-ring and screw the cylinder valve hand tight to the cylinder connection of the manifold block [Fig. 2].

Fig. 2

⚠

3. Tighten the cylinder strap by pulling the free end – Do not over tighten [Fig. 3]. If the strap is over tightened the buckle and backplate will be damaged.

Fig. 3

4. Close the lever on the buckle [Fig. 4].

Fig. 4

5. Secure the cylinder strap with the Velcro [Fig. 5].

Fig. 5

3 POSITIVE PRESSURE

90USA-S

Positive pressure is activated by closing the ambient air hatch by pushing the exhalation valve cover against the face mask. To shut off positive pressure and breathe ambient air, simultaneously press down the indicator arm and push the exhalation valve cover away from the face mask. [Fig. 6 and Fig. 7]

Fig. 6 Activated positive pressure

Fig. 7 Ambient air mode

90USA

Positive pressure is automatically activated by the first breath and can be switched off manually by pushing the lever against the diaphragm housing. [Fig. 8 and 9]

Fig. 8 Activated positive pressure

Fig. 9 Positive pressure switched off

4 CONNECTING AND DISCONNECTING THE FACE MASK

90USA-S - CONNECTING THE FACE MASK

1. Insert the breathing valve, with the ambient air hatch closed, into the face mask [Fig. 10] and move the external speech cone down to lock the breathing valve in position. In the correct position the lower lip of the speech cone covers the serial number on the breathing valve. Tighten the hand screw [Fig. 11].

Fig. 10

Fig. 11

ATTENTION! WHEN PUSHING THE BREATHING VALVE IN PLACE, THE FINGERS SHALL NOT BE POSITIONED ON THE INTERNAL SPEECH DIAPHRAGM SINCE THIS CAN DAMAGE IT.

2. Connect the breathing valve to the breathing hose [Fig. 12].
   NOTE! Some 90USA-S breathing valves with 90° by-pass may be equipped with a quick connection at the by-pass and breathing hose.

Fig. 12

90USA-S - DISCONNECTING THE FACE MASK

1. Loosen the hand screw on the external speech cone. Pull out the hand screw and move the external speech cone upwards to release the breathing valve.
2. Pull out the breathing valve from the face mask.
3. Disconnect the breathing valve from the breathing hose.

90USA - CONNECTING THE FACE MASK

1. Connect the breathing valve to the mask by pushing the valve into the connection piece and turning it counter clockwise until the bayonet coupling is locked. [Fig. 13]

Fig. 13

ATTENTION! WHEN PUSHING THE BREATHING VALVE IN PLACE, THE FINGERS SHALL NOT BE POSITIONED ON THE INTERNAL SPEECH DIAPHRAGM SINCE THIS CAN DAMAGE IT.

2. Mount the external speech cone in the face mask. Tighten the hand screws by hand. [Fig. 14]

Fig. 14

90USA - DISCONNECTING THE FACE MASK

1. Loosen the two hand screws and remove the external speech cone.
2. Turn the breathing valve clockwise until it disengages from the bayonet coupling and pull away from the mask.

5 APPARATUS PRE-USE CHECK

1. Switch off positive pressure, see section 3.
2. Open the cylinder valve fully.
3. With the cylinder valve still open and the positive pressure turned off, read the shoulder mounted pressure gauge.

NOTE! THE CYLINDER VALVE PRESSURE GAUGE AND THE SHOULDER MOUNTED PRESSURE GAUGE MUST READ FULL PRIOR TO USE. AIR CYLINDERS OF ALL SCBA SHALL BE MAINTAINED AT NOT LESS THAN 90 PERCENT OF THE RATED PRESSURE STAMPED ON THE CYLINDER.

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4. Close the cylinder valve. The needle of the shoulder mounted pressure gauge should not move during one minute: If it does - indicating leakage - repairs should be made by an authorized service personnel and the test repeated.
5. With the cylinder closed, open the by-pass valve slightly in order to allow the air to slowly evacuate. Read the pressure gauge when the audible alarm starts to sound. The pressure gauge should read ¼ full. For the 90USA or 90USA-S 4500 psi cylinder pressure versions, the alarm should sound at approximately 1090 psi. For the 90USA or 90USA-S 2216 psi cylinder pressure versions, the alarm should sound at approximately 580 psi.
6. When the alarm sounds, turn the by-pass valve to the "OFF" position.
7. Depressurize the system by turning on the positive pressure, see section 3.

6 DONNING

1. Loosen the shoulder straps and the waist belt and don the apparatus. Initially adjust the shoulder straps so as to position the pack on the lower back.
2. Place the neck strap over the head.
3. Fasten waist belt buckle and tighten. [Fig. 15 and Fig. 16]

Fig. 15

Fig. 16

4. Adjust the shoulder straps [Fig. 17], ensuring the majority of the weight is carried on the hips. Readjust both waist and shoulder straps as necessary and tuck in any loose straps.

Fig. 17

5. Switch off positive pressure, see section 3.
6. Open the cylinder valve fully.
7. Fit the face mask onto the head by first inserting the chin and then pulling the head harness over the head. [Fig. 18]

Fig. 18

8. Tighten the straps on the head harness, starting with the two at the bottom [Fig. 19]. Pull the straps at an approximate angle of 45 degrees to the rear. Do not overtighten the head harness.

Fig. 19

90USA-S:

9A. Activate the positive pressure, see section 3.

90USA:

9B. The positive pressure activates automatically.

7 CHECK BEFORE USE

1. Hold your breath and listen for leakage, adjust the face mask if necessary.
2. Check that a strong air flow is heard when two fingers are inserted between the sealing edge and face. [Fig. 20].

Fig. 20

3. Check the operation of the by-pass by opening the valve and ensure a good flow of air into the face mask. Close the by-pass.
4. Check that the pressure on the pressure gauge reads full. The apparatus is now ready for use.

8 REMOVE THE APPARATUS

1. Switch off the positive pressure, see section 3.
2. Open the buckles to release the head harness, loosen strap and remove the face mask. [Fig. 21].

Fig. 21

3. Close the cylinder valve.
4. Unfasten the waist belt buckle and loosen the shoulder straps.
5. Remove the apparatus and activate the positive pressure to purge air from the system. [Fig. 22 and 23]

Fig. 22

Fig. 23

9 CLEAN AND DISINFECT

1. Open the cylinder valve and check that there is pressure in the system before cleaning.

NOTE: HAVING THE CYLINDER VALVE OPEN PREVENTS WATER FROM ENTERING THE SYSTEM AND BUBBLES WILL INDICATE ANY LEAKS IN THE SYSTEM.

2. Place the apparatus except face mask and breathing valve, pressure gauge and warning whistle into clean water.
3. Clean the apparatus with a brush and mild detergent.
4. Rinse the apparatus in clean water.
5. Dry the apparatus and close the cylinder valve. Activate positive pressure to purge air from the system.

90USA-S

ATTENTION! OBSERVE THAT THE EQUIPMENT MAY BECOME CONTAMINATED BY INFECTED BODY FLUIDS. ALWAYS FOLLOW THE POLICY PRESCRIBED BY YOUR ORGANISATION. INTERSPIRO RECOMMENDS THAT THE FACE MASK IS CLEANED AND DISINFECTED BY FOLLOWING THE PROCEDURE DESCRIBED BELOW. IF THE FACE MASK IS SHARED BETWEEN DIFFERENT INDIVIDUALS IT IS ADVISABLE TO FOLLOW THIS PROCEDURE AFTER EACH USE.

90USA-S - FACE MASK

1. Disconnect the breathing valve as described in section 4.
2. Wash the face mask in lukewarm water (maximum 104° F) with a mild detergent to remove dirt. Check that there are no remnants of dried body fluids.
3. Disinfect the face mask, following the instructions supplied with the disinfectant.
4. Rinse the face mask thoroughly with clean water.
5. Shake the mask to remove excess water and dry the mask, avoiding direct heat and sunlight.

In certain circumstances it is necessary to disassemble part of the mask in order to clean it. Instructions for "Extended cleaning and disinfection" are available on www.interspiro.com/support.

90USA-S - BREATHING VALVE

ATTENTION! WHEN CLEANING THE BREATHING VALVE IT MUST BE COMPLETELY DRY BEFORE IT IS REASSEMBLED AND PUT BACK INTO SERVICE. REMAINING WATER MIGHT FORM ICE ON VITAL PARTS, RESULTING IN MALFUNCTION OF THE BREATHING VALVE.

1. Clean the outside of the breathing valve with a cloth and lukewarm water (maximum 104° F) with a mild detergent to remove dirt.
2. Wipe the breathing valve clean with a cloth and clean water.
3. Dry the breathing valve.

In certain circumstances it is necessary to disassemble the cover and diaphragm in order to clean the breathing valve. Instructions for "Extended cleaning and disinfection" are available on www.interspiro.com/support.

ATTENTION! OBSERVE THAT THE EQUIPMENT MAY BECOME CONTAMINATED BY INFECTED BODY FLUIDS. ALWAYS FOLLOW THE POLICY PRESCRIBED BY YOUR ORGANISATION. INTERSPIRO RECOMMENDS THAT THE FACE MASK IS CLEANED AND DISINFECTED BY FOLLOWING THE PROCEDURE DESCRIBED BELOW. IF THE FACE MASK IS SHARED BETWEEN DIFFERENT INDIVIDUALS IT IS ADVISABLE TO FOLLOW THIS PROCEDURE AFTER EACH USE.

90USA - FACE MASK

1. Wash the face mask in lukewarm water (maximum 104° F) with a mild detergent to remove dirt. Check that there are no remnants of dried body fluids.
2. Disinfect the face mask, following the instructions supplied with the disinfectant.
3. Rinse the face mask thoroughly with clean water.
4. Shake the mask to remove excess water and dry the mask, avoiding direct heat and sunlight.

90USA - BREATHING VALVE

ATTENTION! WHEN CLEANING THE BREATHING VALVE IT MUST BE COMPLETELY DRY BEFORE IT IS REASSEMBLED AND PUT BACK INTO SERVICE. REMAINING WATER MIGHT FORM ICE ON VITAL PARTS, RESULTING IN MALFUNCTION OF THE BREATHING VALVE.

1. Clean the outside of the breathing valve with a cloth and lukewarm water (maximum 104° F) with a mild detergent to remove dirt.
2. Wipe the breathing valve clean with a cloth and clean water.
3. Unscrew the locking ring and remove the positive pressure attachment from the valve housing. [Fig 24]

Fig. 24

4. Block the connection nipple and inlet with rubber plug.[Fig 25]

Fig. 25

5. Carefully remove the diaphragm unit from the cover by squeezing the thread of the cover. [Fig 26]

Fig. 26

6. Remove the guide disc with positive pressure spring. [Fig 27]

Fig. 27

7. Remove the sealing disc from the diaphragm unit. [Fig 28]

Fig. 28

WARNING: DO NOT DISASSEMBLE THE DIAPHRAGM UNIT FURTHER!

8. Wash the parts in lukewarm water (maximum 104° F) with a mild detergent to remove dirt. Check that there are no remnants of dried body fluids.
9. Disinfect following the instructions supplied with the disinfectant.
10. Rinse thoroughly with clean water.
11. Dry the parts carefully.
12. Remove the rubber plugs and check that there is no water ingress. In case of water ingress connect to an air source to blow out any remaining water.
13. Place the guide disc with positive pressure spring in the cover. [Fig 27]
14. Assemble the sealing disc with the diaphragm unit. [Fig 28]

15. Place the diaphragm unit onto the positive pressure spring and press straight down until it snaps into the cover [Fig 26]. Do not twist the spring.
16. Push gently on the guide pin to check that the diaphragm moves easily.
17. Make sure the O-ring is correctly seated in the groove on the diaphragm unit, lubricate if necessary.
18. Turn the lever to the position for activated positive pressure (as described in section 3).
19. Mount the locking ring onto the valve housing. [Fig 24]
20. Centre the guide pin on the positive pressure attachment in the oblong hole of the valve insert lever.
21. Screw the locking ring together with the positive pressure attachment [Fig 24]. The locking ring, not the positive pressure attachment, shall be rotated.

10 STORAGE

Store in a cool, dry and dust-free environment. Protect rubber parts from direct sunlight, UV radiation and direct heat. When the regulator unit is not connected the cylinder valve shall always have a protective plug.

During storage, the breathing valve shall be in the position for activated positive pressure, see section 3.

11 EXTRA AIR CONNECTION

The 90USA-S and 90USA can be equipped with an extra-air manifold fitted with a "IS"-type quick connection for extra air.

The connection can be used to:

- Feed the apparatus with medium pressure air from an external air source.
- Connecting a chemical suit ventilation system.
- Connecting rescue hoses between two apparatus.
- Connecting the rescue mask REVITOX.

To take out air from the apparatus to feed a ventilated chemical suit/rescue hose or Revitox extra mask, a special female coupling with a non-return valve opener is used. This device opens the non-return valve in the male coupling mechanically. This female coupling must not be used in airline systems as the non-return valve must be able to close if the airline hose is cut off by any means. The female couplings with a non-return valve opener shall only be used on shorter hoses that can be controlled and the couplings disconnected if necessary.

Connection

The securing ring on the female coupling must be open before connection. Press the female onto the male and secure the fitting by screwing up the locking ring.

Disconnection

Unscrew the locking ring and pull back the movable sleeve on the coupling.

12 SERVICE AND TESTING

Service and testing shall be performed according to the minimum requirements described in the "Service and Testing Schedule" with publication number 97307.

Local requirements may differ due to regulations and environmental conditions.

In case of doubt consult your local INTERSPIRO representative.

The "Service and Testing Schedule" is available on the INTERSPIRO website *www.interspiro.com* .

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